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INDEX TO UREDINEOUS CULTURE EXPERIMENTS WITH LIST OF SPECIES AND HOSTS FOR NORTH AMERICA. I.

W. A. KELLERMAN.

(Continued from p. 257, Vol. 9.)

Since the first part of this INDEX was published there has appeared (on the preceding pages of this No. of the Journal), an important article embodying the culture work of J. C. Arthur in 1903. The following additions thereto, including some corrections, are to be referred to their proper alphabetical place in that portion of the Index.

AECIDIUM ellisii Tr. & Gall. on *Chenopodium album* L., *see* *Puccinia subnitens* Diet. from *Distichlis spicata* (L.) Greene. [Kellerman.]

AECIDIUM on *Helianthus grosse-serratus* Mont. on *H. maximiliani* Schrad., *see* *Puccinia helianthi* Schw. from *Helianthus grosse-serratus* Mart. [Arthur.]

AECIDIUM on *Helianthus annuus* and *H. mollis*, *see* *Puccinia helianthi* Schw. from *Helianthus mollis*. [Kellerman]

AECIDIUM hydnoideum B. & C., from *Dirca palustris* L. (uredo and teleuto [*Puccinia hydnoidea* (B. & C.) Arth. n. n.] on *Bromus ciliatus* L.). J. C. Arthur. Jour. Mycol. 10:19. Jan. 1904.

AECIDIUM [*Caeoma*] on *Larix decidua* Mill., *see* *Melampsora medusae* Thüm. teleutospores from *Larix decidua*. [Arthur]

AECIDIUM leucospermum B. & C. on *Lespedeza capitata* Mx., *see* *Uromyces lespedezae-procumbentis* (Schw.) Curt. teleutospores from *Lespedeza capitata*. [Arthur]

AECIDIUM pustulatum Curt. on *Comandra umbellata* (L.) Nutt., *see* *Puccinia pustulata* (Curt.) Arth. teleutospores from *Andropogon furcatus* Muhl. and *A. scoparius* Mx. [Arthur]

AECIDIUM ranunculi Schw. from *ranunculus abortivus* L. (uredo and teleuto [*Puccinia eatoniae* Arth. n. n.] on *Eatonia pennsylvanica* (DC.) A. Gray). J. C. Arthur. Jour. Mycol. 10:18. Jan. 1904.

AECIDIUM on *Ribes cynosbati* (spermogonia and aecidia), *see* *Puccinia albiperidia* Arth. teleutospores from *Carex gracillima* Schw. [Arthur]

AECIDIUM on *Salvia lanceolata*, *see* *Puccinia caulicola* Tr. & Gall. teleutospores from *Salvia lanceolata*. [Arthur]

- AECIDIUM on *Solidago canadensis* L., *S. serotina* Ait., *S. flexicaulis* L., *S. caesia* L., *see* *Uromyces caricis-solidaginis* Arth. teleutospores from *Carex varia* Muhl. [Arthur]
- ANDROPOGON *furcatus* Muhl. and *A. scoparius* Mx. (spermogonia and aecidia [*Aecidium pustulatum* Curt.] on *Comandra umbellata* (L.) Nutt., *see* *Puccinia pustulata* (Curt.) Arth. from *Andropogon furcatus* Muhl. and *A. scoparius* Mx. [Arthur]
- ANDROPOGON *scoparius* Mx. and *A. furcatus* Muhl., *see* *Andropogon furcatus* Muhl. and. . . [Arthur]
- ANDROPOGON *scoparius* Mx. (spermogonia and aecidia on *Pentstemon hirsutus*), *see* *Puccinia andropogonis* Schw. teleutospores from *Andropogon scoparius* Mx. [Arthur]
- BROMUS *ciliatus* L. (*Puccinnia hydnoidea* (B. & C.) Arth), *see* *Aecidium hydnoideum* B. & C. from *Dirca palustris* L. [Arthur]
- CAEOMA on *Larix decidua* Mill., *see* *Aecidium* on *Larix decidua* Mill. [Arthur]
- CALAMOVILFA *longifolia* (Hook.) Hack. (spermogonia and aecidia on *Smilax hispida*), *see* *Puccinia amphigena* Diet. teleutospores from *Calamovilfa longifolia* (Hook.) Hack. [Arthur]
- CAREX *gracillima* Schw. (spermogonia and aecidia on *Ribes cynosbati*), *see* *Puccinia albiperidia* Arth. teleutospores from *Carex gracillima* Schw. [Arthur]
- COMANDRA *umbellata* (L.) Nutt. (*Aecidium pustulatum* Curt.), *see* *Puccinia pustulata* (Curt.) Arth. teleutospores from *Andropogon furcatus* Muhl. and *A. scoparius* Mx. [Arthur]
- CAREX *varia* Muhl. (spermogonia and aecidia on *Solidago canadensis* L., *S. serotina* Ait., *S. flexicaulis* L., *S. caesia* L.) *see* *Uromyces caricis-solidaginis* Arth. teleutospores from *Carex varia* Muhl. [Arthur]
- CHENOPODIUM *album* L. (*Aecidium ellisii* Tr. & Gall.), *see* *Puccinia subnitens* Diet. from *Distichlis spicata* (L.) Greene. [Kellerman]
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- DISTICHLIS *spicata* (L.) Greene (*Aecidium ellisii* Tr. & Gall. on *Chenopodium album* L.), *see* *Puccinia subnitens* Diet. from *Distichlis spicata* (L.) Greene. [Kellerman]
- EATONIA *pennsylvanica* (DC.) A. Gray (*Puccinia eatoniae* Arth.), *see* *Aecidium ranunculi* Schw. from *Ranunculus abortivus* L. [Arthur]

ELYMUS virginicus L. (spermogonia and aecidia on *Impatiens aurea*), *see* *Puccinia impatientis* (Schw.) Arth. teleutospores from *Elymus virginicus*. [Arthur]

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EUPHORBIA nutans (Uredo on *Euphorbia nutans*), *see* *Uromyces euphorbiae* C. & P. aecidiospores from *Euphorbia nutans* [Arthur]

EUPHORBIA nutans Lag. (*Uromyces euphorbiae* C. & P. uredo), *see* *Uromyces euphorbiae* C. & P. aecidiospores from *Euphorbia nutans* Lag. [Arthur]

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FESTUCA sp. indet. (*Puccinia coronata* Corda), *see* *Puccinia coronata* Corda uredospores from *Avena sativa*. [Carleton]

FRAXINUS viridis (*Aecidium fraxini* Schw.), *see* *Puccinia peridermiospora* (E. & T.) Arth. from *Spartina cynosuroides*. [Arthur]

- GYMNOCONIA interstitialis (Caeoma nitens Schw.) from Rubus occidentalis and R. villosus (Gymnoconia interstitialis teleuto [Puccinia peckiana Howe] on Rubus occidentalis and R. villosus). G. W. Clinton. Bot. Gaz. 20: 116. March 1895.
- GYMNOCONIA interstitialis (Puccinia peckiana Howe teleuto on Rubus occidentalis and R. villosus), *see* Gymnoconia interstitialis (Caeoma nitens Schw.) from Rubus occidentalis and R. villosus. [Clinton]
- GYMNOSPORANGIUM biseptatum from [Cupressus thyoides] (Roestelia botryapites on Amelanchier canadensis). Roland Thaxter. Proc. Amer. Acad. Arts & Sci. Boston, 14: 263. (Separate) Jan. 1887.
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- GYMNOSPORANGIUM globosum from Juniperus [virginiana] (Roestelia "lacerata z" [R. globosum Thax. as later used] on Pyrus malus, Pyrus americana and Crataegus crus-galli). Roland Thaxter. Conn. Agr. Exp. Sta. Bull. 107:4. 15 Apr. 1891.
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- HELIANTHUS annuus L. (spermogonia and aecidia), *see* Puccinia helianthi Schw. teleutospores from Helianthus mollis Lam. [Arthur]
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- HORDEUM [distichum] (*Puccinia graminis tritici*), *see* *Aecidium berberidis* from [*Berberis vulgaris*]. [Carleton]
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- HORDEUM jubatum (*Puccinia graminis tritici* on *Triticum vulgare*), *see* *Puccinia graminis tritici* from *Hordeum jubatum*. [Carleton]
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- JUNIPERUS virginiana (*Roestelia aurantiaca* on *Amelanchier canadensis* and *Pyrus malus* [spermogonia]), *see* *Gymnosporangium clavipes* from [*Juniperus virginiana*]. [Thaxter]
- JUNIPERUS virginiana (*Roestelia cornuta* on *Amelanchier canadensis* and *Pyrus malus* [spermogonia only]), *see* *Gymnosporangium conicum* from [*Juniperus virginiana*]. [Thaxter]
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- JUNIPERUS virginiana (Roestelia [penicillata] on Pirus coronaria), *see* Gymnosporangium macropus from Juniperus virginiana. [Halsted]
- JUNIPERUS virginiana (Roestelia pirata on Pirus malus cult.), *see* Gymnosporangium macropus from Juniperus virginiana. [Stewart & Carver]
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- JUNIPERUS virginiana (Roestelia pyrata on Pyrus malus), *see* Gymnosporangium macropus from [Juniperus virginiana]. [Thaxter]
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- JUNIPERUS virginiana (————? spermogonia on Amelanchier canadensis, Pyrus arbutifolia and P. malus), *see* Gymnosporangium clavipes from [Juniperus virginiana] [Farlow]
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- JUNIPERUS virginiana (————? spermogonia on Crataegus oxycantha, C. douglasii, and Pyrus malus), *see* Gymnosporangium globosum from Juniperus virginiana. [Farlow]
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- JUNIPERUS virginiana (————? spermogonia on Crataegus tomentosa and Amelanchier canadensis), *see* Gymnosporangium macropus from Juniperus virginiana. [Farlow]
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- KOELERIA cristata (*Puccinia coronata* Corda), *see* *Puccinia coronata* Corda uredospores from *Avena sativa*. [Carleton]
- KOELERIA cristata (*Puccinia graminis tritici*), *see* *Puccinia graminis tritici* uredospores from *Triticum vulgare*. [Carleton]
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- LYCOPUS americanus (*Puccinia angustata* Pk. uredo on *Scirpus atrovirens*), *see* *Puccinia angustata* Pk. aecidiospores [*Aecidium lycopi* Ger.] from *Lycopus americana*. [Arthur]
- MELAMPSORA medusae Thüm. teleutospores from *Populus deltoides* Marsh. (spermogonia and aecidia [Caeoma] on *Larix decidua* Mill. [*Larix europæa* DC.]). J. C. Arthur. Jour. Mycol. 10:13. Jan. 1904.
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- OSMORRHIZA brevistylis, *see* *Washingtonia claytoni*.
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- PANICUM virgatum (*Puccinia panici* Diet. uredo), *see* *Aecidium pammellii* Trel. from *Euphorbia corollata* L. [Stuart]
- PENTSTEMON pubescens (*Aecidium pentstemonis* Schw.), *see* *Puccinia americana* Lagh. from *Andropogon scoparius*. [Arthur]
- PENTSTEMON pubescens (*Puccinia americana* Lagh. uredo on *Andropogon scoparius*), *see* *Puccinia americana* Lagh. aecidiospores [*Aecidium pentstemonis* Schw.] from *Pentstemon pubescens*. [Arthur]
- PENTSTEMON hirsutus ([*Aecidium pentstemonis*] *spermogonia*), *see* *Puccinia andropogonis* Schw. from *Andropogon scoparius*. [Kellerman]
- PENTSTEMON hirsutus (L.) Willd. (*spermogonia* and *aecidia*), *see* *Puccinia andropogonis* Schw. teleutospores from *Andropogon scoparius* Mx. [Arthur]
- PHALARIS arundinacea (*Puccinia coronata* Corda), *see* *Puccinia coronata* Corda uredospores from *Avena sativa*. [Carleton]
- PHALARIS caroliniana (*Puccinia coronata* Corda), *see* *Puccinia coronata* Corda *aecidium* from *Rhamnus lanceolata*. [Carleton]
- PHASEOLUS diversifolius Pers. *see* *Strophostyles helvola* (L.) Britt.
- PHLEUM pratense (*Puccinia coronata* Corda), *see* *Puccinia coronata* Corda uredospores from *Avena sativa*. [Carleton]

- PHRAGMIDIUM speciosum Fr. spermogonia on *Rosa humilis*, *see* *Phragmidium speciosum* Fr. from *Rosa* (hardy garden rose). [Arthur]
- PHRAGMIDIUM speciosum Fr. from *Rosa* sp. (*Caeoma miniata* Am, Auct. on *Rosa* [Tea rose, Kaiserin Augusta Victoria]). J. C. Arthur. Bot. Gaz. 29:271. April 1900.
- PHRAGMIDIUM speciosum Fr. from *Rosa* (hardy garden rose) ([*Phragmidium speciosum* Fr.] spermogonia on *Rosa humilis*). J. C. Arthur. Bot. Gaz. 35:17. Jan. 1903.
- PHRAGMITES communis (*Aecidium rubellum* Pers. on *Rumex crispus*, *R. obtusifolius*), *see* *Puccinia phragmitis* (Schum.) Körn. from *Phragmites communis*. [Arthur]
- PHRAGMITES communis Trin., *see* *Phragmites phragmites* (L.) Karst. [Arthur]
- PHRAGMITES phragmites (L.) Karst. (*P. communis* Trin.) (*Aecidium ranunculacearum* (?) on *Anemone canadensis*), *see* *Puccinia simillima* Arth. from *Phragmites phragmites* L.) Karst. (*P. communis* Trin.). [Arthur]
- PHRAGMITES phragmites (aecidia [*Aecidium rubellum* Pers.] on *Rumex altissimus*), *see* *Puccinia phragmitis* (Schum.) Körn. from *Phragmites phragmites*. [Bates]
- PIRUS coronaria (*Roestelia penicillata*), *see* *Gymnosporangium macropus* from *Juniperus virginiana*. [Halsted]
- PIRUS malus cult. (*Roestelia pirata*), *see* *Gymnosporangium macropus* from *Juniperus virginiana*. [Stewart & Carver]
- PLANTAGO rugelii (*Aecidium plantaginis* Ces [?]), *see* *Uromyces aristidae* E. & E. from *Aristida oligantha* Mx. [Arthur]
- POLYPOGON monspeliensis (*Puccinia coronata* Corda), *see* *Puccinia coronata* Corda uredospores from *Avena sativa*. [Carleton]
- POPULUS deltoides Marsh. (spermogonia and aecidia [*caeoma*] on *Larix decidua* Mill. (*L. europaea* DC.), *see* *Melampsora medusae* Thüm. teleutospores from *Populus deltoides*. [Arthur]
- PTELEA trifoliata (*Aecidium pteleae*), *see* *Puccinia windsoriae* Schw. from *Tricuspis seslerioides*. [Kellerman]
- PTELEA trifoliata L. (*Puccinia windsoriae* Schw. aecidia [*Aecidium pteleae* B. & C.]), *see* *Puccinia windsoriae* Schw. from *Tricuspis seslerioides* Torr. (*Triodia cuprea* Jacq.). [Arthur]

- PTELEA trifoliata* (*Puccinia windsoriae* Schw. uredo on *Triodia cuprea* (*Sieglingia sesleriodes* Scrib.), *see* *Puccinia windsoriae* Schw. aecidiospores (*Aecidium pteleae* (*Aecidium pteleae* B. & C.) from *Ptelea trifoliata*. [Arthur]
- PUCCINIA albiperidia* Arth. sp. nov. from *Carex pubescens* Muhl. (*Aecidium albiperidium* Arth. on *Ribes cynosbati* L.). J. C. Arthur. Jour. Mycol. 8:53. June 1903.
- PUCCINIA albiperidia* Arth. teleutospores from *Carex gracillima* Schw. (spermogonia and aecidia on *Ribes cynosbati* L.). J. C. Arthur. Jour. Mycol. 10:11. Jan. 1904.
- PUCCINIA americana* Lagh. aecidiospores [*Aecidium pentstemonis* Schw.] from *Pentstemon pubescens* (*Puccinia americana* Lagh. uredo on *Andropogon scoparius*). J. C. Arthur. Bot. Gaz. 29:272. April 1900.
- PUCCINIA americana* Lagh. from *Andropogon scoparius* (*Aecidium pentstemonis* Schw. on *Pentstemon pubescens*). J. C. Arthur. Bot. Gaz. 29:272. April 1900.
- PUCCINIA americana* Lagh. uredo on *Andropogon scoparius*, *see* *Puccinia americana* Lagh. aecidiospores [*Aecidium pentstemonis* Schw.] from *Pentstemon pubescens*. [Arthur]
- PUCCINIA americana* Lagh. — a synonym of *P. andropogonis* Schw. [J. C. Arthur; Bull. Lab. Nat. Hist. Univ. Iowa, 5:182. May 1901.]
- PUCCINIA amphigena* Diet. from *Calamovilfa longifolia* (Hook.) Hack. (*Aecidium smilacis* Schw. on *Smilax herbacea* L. and *S. hispida* Muhl.). J. C. Arthur. Bot. Gaz. 35:20. Jan. 1903.
- PUCCINIA amphigena* Diet teleutospores from *Calamovilfa longifolia* (Hook.) Hack. (spermogonia and aecidia on *Smilax hispida*). J. C. Arthur. Jour. Mycol. 10:11. Jan. 1904.
- PUCCINIA andropogonis* Schw. from *Andropogon scoparius* ([*Aecidium pentstemonis*] spermogonia on *Pentstemon hirsutus*). W. A. Kellerman. Jour. Mycol. 9:10. Feb. 1903.
- PUCCINIA andropogonis* Schw., *see* *P. americana* Lagh.
- PUCCINIA andropogonis* Schw. teleutospores from *Andropogon scoparius* Mx. (spermogonia and aecidia on *Pentstemon hirsutus*). J. C. Arthur. Jour. Mycol. 10:11. Jan. 1904.
- PUCCINIA angustata* Pk. aecidia [*Aecidium lycopi* Ger.] on *Lycopus americanus* Muhl., *see* *Puccinia angustata* Pk. from *Scirpus atrovirens* Muhl. [Kellerman]

- PUCCINIA angustata* Pk. from *Scirpus atrovirens* (*Aecidium lycopi* Ger. on *Lycopus americanus*). J. C. Arthur. Jour. Mycol. 8:53. June 1902.
- PUCCINIA angustata* Pk. aecidiospores [*Aecidium lycopi* Ger.] from *Lycopus americana* (*Puccinia angustata* Pk. uredo on *Scirpus atrovirens*. J. C. Arthur. Bot. Gaz. 29:273. April 1900.
- PUCCINIA angustata* Pk. teleutospores from *Scirpus atrovirens* Muhl. (*Puccinia angustata* Pk. aecidia [*Aecidium lycopi* Ger.] on *Lycopus americanus* Muhl). W. A. Kellerman. Jour. Mycol. 9:226. Dec. 1903.
- PUCCINIA angustata* Pk. uredo on *Scirpus atrovirens*, *see* *Puccinia angustata* aecidiospores [*Aecidium lycopi* Ger.] from *Lycopus americana*. [Arthur]
- PUCCINIA atkinsoniana* Diet. from *Carex lurida* (*Aecidium sambuci* Schw. on *Sambucus canadensis*). W. A. Kellerman. Jour. Mycol. 9:7. Feb. 1903.
- PUCCINIA atkinsoniana* Diet., synonym of *P. sambuci* (Schw.) Arth. n. n.
- PUCCINIA atkinsoniana* and *P. bolleyana* are identical and synonyms of *P. sambuci* (Schw.) nom. nov. [J. C. Arthur. Bot. Gaz. 35:15. Jan. 1903.]
- PUCCINIA bartholomaei* Diet. [*P. jamesiana* (Pk.) Arth. n. n.] from *Atheropogon curtispendus* Fourn. (*Bouteloua curtispendula* Torr.) (*Aecidium jamesianum* on *Aecidium jamesianum* on *Asclepias incarnata* and *A. syriaca* L.). J. C. Arthur. Bot. Gaz. 35:18. Jan. 1903.
- PUCCINIA bolleyana* Sacc. from *Carex trichocarpa* (*Aecidium sambuci* Schw. on *Sambucus canadensis*). W. A. Kellerman. Jour. Mycol. 9:8. Feb. 1903.
- PUCCINIA bolleyana* Sacc. from *Carex trichocarpa* (*Aecidium sambuci* Schw. (?) on *Sambucus canadensis*). J. C. Arthur. Jour. Mycol. 8:55. June 1902.
- PUCCINIA bolleyana* Sacc. from *Carex trichocarpa* (*Aecidium sambuci* Schw.?) from *Sambucus canadensis* (*Puccinia bolleyana* Sacc. uredo on *Carex trichocarpa*. J. C. Arthur. Jour. Mycol. 8:55. June 1902.
- PUCCINIA bolleyana* Sacc. uredo on *Carex trichocarpa*, *see* *Puccinia bolleyana* Sacc. aecidiospores (*Aecidium sambuci* Schw.?) from *Sambucus canadensis*. [Stuart]
- PUCCINIA bolleyana* and *P. atkinsoniana* are identical and synonyms of *P. sambuci* (Schw.) nom. nov. [J. C. Arthur. Bot. Gaz. 35:15. Jan. 1903.]

- PUCCINIA bolleyana Sacc., syn. of Puccinia sambuci (Schw.) Arth. n. n.
- PUCCINIA caricina DC. from Carex trichocarpa, *see* Puccinia peckii (DeToni) Kellerm. n. n. [P. caricina DC. p. p.] from Carex trichocarpa. [Kellerman]
- PUCCINIA caricis (Schum.) Reb. from Carex riparia (Aecidium urticae Schum. on Urtica gracilis). W. A. Kellerman. Jour. Mycol. 9:9. Feb. 1903.
- PUCCINIA caricis (Schum.) Reb. aecidiospores [Aecidium urticae Schum.] from [Urtica sp.] (Puccinia caricis (Schum.) Reb. uredo on Carex stricta. J. C. Arthur. Bot. Gaz. 29:270. April 1900.
- PUCCINIA caricis (Schum.) Reb. from Carex stricta Lam. (Puccinia caricis (Schum.) Reb. aecidia on Urtica gracilis). J. C. Arthur. Bot. Gaz. 35:16. Jan. 1903.
- PUCCINIA caricis (Schum.) Reb. from Carex stricta (Aecidium urticae Schum. on Urtica gracilis). W. A. Kellerman. Jour. Mycol. 9:10. Feb. 1903.
- PUCCINIA caricis (Schum.) Reb. from Carex stricta (Aecidium urticae on Urtica gracilis). J. C. Arthur. Jour. Mycol. 8:52. June 1902.
- PUCCINIA caricis (Schum.) Reb. uredo on Carex stricta, *see* Puccinia caricis (Schum.) Reb. aecidiospores [Aecidium urticae Schum.] from [Urtica sp.] [Arthur]
- PUCCINIA caricis (Schum.) Reb. aecidia on Urtica gracilis, *see* Puccinia caricis (Schum.) Reb. from Carex stricta Lam. [Arthur]
- PUCCINIA caricis-asteris Arth. aecidia on Aster paniculatus, *see* Puccinia caricis-asteris Arth. from Carex foenea Willd. [Arthur]
- PUCCINIA caricis-asteris Arth. sp. nov. from Carex foenea (Aecidium asterum Schw. on Aster paniculatus and A. cordifolius.) J. C. Arthur. Jour. Mycol. 8:54. June 1902.
- PUCCINIA caricis-asteris Arth. from Carex foena Willd. (Puccinia caricis-asteris Arth. aecidia on Aster paniculatus). J. C. Arthur. Bot. Gaz. 35:15. Jan. 1903.
- PUCCINIA caricis-erigerontis Arth. from Carex festucacea Willd. (Puccinia caricis-erigerontis Arth. aecidia on Erigeron annuus (L.) Pers., E. philadelphicus L. and Leptilon canadense (L.) Britt. J. C. Arthur. Bot. Gaz. 35:15. Jan. 1903.

- PUCCINIA caricis-erigerontis** Arth. from *Carex festucacea* (*Aecidium* [*erigeronatum* Schw.] on *Erigeron annuus*). J. C. Arthur. Jour. Mycol. 8:53. June 1902.
- PUCCINIA caricis-erigerontis** Arthur from *Carex festucacea* Willd. (*Puccinia caricis-erigerontis* Arth. aecidia on *Leptilon canadense* (L.) Britt.). W. A. Kellerman. Jour. Mycol. 9:228. Dec. 1903.
- PUCCINIA caricis-erigerontis** Arth. aecidia on *Erigeron annuus* (L.) Pers., *E. philadelphicus* L. and *Leptilon canadense* (L.) Britt., *see* *Puccinia caricis-erigerontis* Arth. from *Carex festucacea* Willd. [Arthur]
- PUCCINIA caricis-erigerontis** Arth. aecidia on *Leptilon canadense* (L.) Britt., *see* *Puccinia caricis-erigerontis* Arth. from *Carex festucacea* Willd. [Kellerman]
- PUCCINIA caricis-solidaginis** Arthur n. n. from *Carex jamesii* Schw. (*Aecidium solidaginis* Schw. on *Solidago canadensis* L., *S. caesia* L. (spermogonia), *S. rigida* L. (spermogonia), *S. serotina* Ait., and *S. ulmifolia* Muhl. (spermogonia). J. C. Arthur. Bot. Gaz. 35:21. Jan. 1903.
- PUCCINIA caricis-solidaginis** Arth. n. n. (*Puccinia* on *Carex jamesii* Schw. and *C. stipata* Muhl., and *Aecidium solidaginis* Schw.). J. C. Arthur. Bot. Gaz. 35:21. Jan. 1903.
- PUCCINIA caricis-solidaginis** Arthur n. n. from *Carex stipata* Muhl. (*Aecidium solidaginis* Schw. on *Solidago canadensis* and *S. serotina*). J. C. Arthur. Bot. Gaz. 35:21. Jan. 1903.
- PUCCINIA caricis-solidaginis** Arth. aecidia on *Solidago canadensis* L., *see* *Puccinia caricis-solidaginis* Arth. from *Carex stipata* Muhl. [Kellerman]
- PUCCINIA caricis-solidaginis** Arth. from *Carex stipata* Muhl. (*Puccinia caricis-solidaginis* Arth. aecidia on *Solidago canadensis* L.). W. A. Kellerman. Jour. Mycol. 9:228. Dec. 1903.
- PUCCINIA caulicola** Tr. & Gall. (aecidia [*Aecidium caulicolum* Kellerm.] on *Salvia lanceolata* Willd.), *see* *Puccinia caulicola* Tr. & Gall. teleutospores from *Salvia lanceolata* Willd. [Kellerman]
- PUCCINIA caulicola** Tr. & Gall. teleutospores from *Salvia lanceolata* Willd., (*Puccinia caulicola* Tr. & Gall. aecidia [*Aecidium caulicolum* Kellerm.] on *Salvia lanceolata* Willd.). W. A. Kellerman. Jour. Mycol. 9:227. Dec. 1903.
- PUCCINIA caulicola** Tr. & Gall. teleutospores from *Salvia lanceolata* Willd. (spermogonia and aecidia on *Salvia lanceolata*). J. C. Arthur. Jour. Mycol. 10:14. Jan. 1904.

- PUCCINIA chrysanthemi* Roze uredospores from *Chrysanthemum indicum* (*Puccinia chrysanthemi* Roze uredo on *Chrysanthemum indicum*). J. C. Arthur. Ind. Agr. Exp. Sta. Bull. 85:145. Oct. 1900.
- PUCCINIA chrysanthemi* Roze uredospores on *Chrysanthemum indicum*, *see* *Puccinia chrysanthemi* Roze uredo from *Chrysanthemum indicum*. [Arthur]
- PUCCINIA cirsii-lanceolati* Schroet. teleutospores from *Carduus lanceolatus* L. (*Puccinia cirsii-lanceolati* Schroet. aecidia [*Aecidium cirsii-lanceolati* Kellerm.] uredo and teleuto on *Carduus lanceolatus* L.). W. A. Kellerman. Jour. Mycol. 9:229. Dec. 1903.
- PUCCINIA cirsii-lanceolati* Schroet. aecidia [*Aecidium cirsii-lanceolati* Kellerman] uredo and teleuto on *Carduus lanceolatus* L., *see* *Puccinia cirsii-lanceolati* Schroet. teleutospores from *Carduus lanceolatus* L. [Kellerman]
- PUCCINIA convolvuli* Cast. from *Convolvulus sepium* (*Aecidium calystegiae* Desm. on *Convolvulus sepium*). J. C. Arthur. Bot. Gaz. 29:270. April 1900.
- PUCCINIA coronata* Corda on *Alopecurus alpestris*, *Anthoxanthum odoratum*, *Avena fatua*, *A. pratensis*, *A. sativa*, *Dactylis glomerata*, *Eatonia* sp. indet., *Festuca* sp. indet., *Koeleria cristata*, *Phalaris arundinacea*, *Phleum pratense*, *Polypogon monspeliensis*, *see* *Puccinia coronata* Corda uredospores from *Avena sativa*. [Carleton]
- PUCCINIA coronata* Corda on *Avena sativa*, *Phalaris caroliniana*, *Arrhenatherum elatius*, *see* *Puccinia coronata* Corda aecidium from *Rhamnus lanceolata*. [Carleton]
- PUCCINIA coronata* Corda aecidiospores from *Rhamnus lanceolata* (*Puccinia coronata* Corda on *Avena sativa*, *Phalaris caroliniana*, *Arrhenatherum elatius*.) Mark Alfred Carleton. U. S. Dept. Agr. Div. Veg. Phys. & Path. Bull. 16:48. 27 Sept. 1899.
- PUCCINIA coronata* Corda uredospores from *Avena sativa* (*Puccinia coronata* Corda on *Alopecurus alpestris*, *Anthoxanthum odoratum*, *Avena fatua*, *A. pratensis*, *A. sativa*, *Dactylis glomerata*, *Eatonia* sp. indet., *Festuca* sp. indet., *Koeleria cristata*, *Phalaris arundinacea*, *Phleum pratense*, *Polypogon monspeliensis*). Mark Alfred Carleton. U. S. Dept. Agr. Div. Veg. Phys. & Path. Bull. 16:46-7. 27 Sept. 1899.
- PUCCINIA eatoniae* Arth. n. n. on *Eatonia pennsylvanica* (DC.) A. G.), *see* *Aecidium ranunculi* Schw. from *Ranunculus abortivus* L. [Arthur]

- PUCCINIA fraxinata (Lk.) Arth. n. n. for *P. atkinsoniana* Diet. & *P. bolleyana* Sacc. [Arthur]
- PUCCINIA graminis on Avena sativa, *see* Puccinia graminis uredospores from Avena sativa. [Hitchcock & Carleton]
- PUCCINIA graminis on Avena sativa, *see* Puccinia graminis uredospores from Triticum vulgare. [Hitchcock & Carleton]
- PUCCINIA graminis uredospores from Avena sativa (*Puccinia graminis* on Avena sativa). A. S. Hitchcock & M. A. Carleton. Kans. Exp. Sta. Bull. 46:3. May 1894.
- PUCCINIA graminis on Hordeum distichum, *see* Puccinia uredospores from Triticum vulgare. [Hitchcock & Carleton]
- PUCCINIA graminis on Triticum vulgare, *see* Puccinia graminis uredospores on Triticum vulgare. [Hitchcock & Carleton]
- PUCCINIA graminis uredospores from Triticum vulgare (*Puccinia graminis* on Avena sativa). A. S. Hitchcock & M. A. Carleton. Kans. Exp. Sta. Bull. 46:3. May 1894.
- PUCCINIA graminis uredospores from Triticum vulgare (*Puccinia graminis* on Hordeum distichum.) A. S. Hitchcock & M. A. Carleton. Kans. Exp. Sta. Bull. 46:3. May 1894.
- PUCCINIA graminis uredospores from Triticum vulgare (*Puccinia graminis* on Triticum vulgare). A. S. Hitchcock & M. A. Carleton. Kansas Exp. Sta. Bull. 46:3. May 1894.
- PUCCINIA graminis tritici [Aecidium], *see* Aecidium berberidis. [Carleton]
- PUCCINIA graminis tritici on Elymus canadensis, *E. can. glaucifolius*, Triticum vulgare, *see* Puccinia graminis tritici uredospores from Elymus canadensis glaucifolius. [Carleton]
- PUCCINIA graminis tritici uredospores from Elymus canadensis glaucifolius (*Puccinia graminis tritici* on Elymus canadensis, *E. canadensis glaucifolius*, Triticum vulgare). Mark Alfred Carleton. U. S. Dept. Agr. Div. Veg. Phys. & Path. Bull. 16:55. 27 Sept. 1899.
- PUCCINIA graminis tritici on Hordeum [distichum], *see* Aecidium berberidis from Hordeum [distichum]. [Carleton]
- PUCCINIA graminis tritici from Hordeum jubatum (*Puccinia graminis tritici* on Triticum vulgare). Mark Alfred Carleton. U. S. Dept. Agr. Div. Veg. Phys. & Path. Bull. 16:55. 27 Sept. 1899.
- PUCCINIA graminis tritici on Triticum vulgare, Festuca gigantea, Agropyron richardsoni, Triticum monococcum, Hordeum [distichum], Koeleria cristata, *see* Puccinia graminis tritici uredospores from Triticum vulgare. [Carleton]

- Puccinia graminis tritici on Triticum vulgare, *see* Puccinia graminis tritici-uredospores from Hordeum jubatum. [Carleton]
- Puccinia graminis tritici from Triticum vulgare (Puccinia graminis tritici on Triticum vulgare, Festuca gigantea, Agropyron richardsoni, Triticum monococcum, Hordeum [distichum], Koeleria cristata). Mark Alfred Carleton. U. S. Dept. Agr. Div. Veg. Phys. & Path. Bull. 16: 54-5. 27 Sept. 1899.
- Puccinia helianthi Schw. aecidia on Helianthus mollis and H. annuus L., *see* Puccinia helianthi Schw. from Helianthus mollis Lam. [Kellerman]
- Puccinia helianthi Schw. from Helianthus mollis Lam. (Puccinia helianthi Schw. aecidia on Helianthus mollis Lam. and H. annuus L. W. A. Kellerman. Jour. Mycol. 9:230. Dec. 1903.
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- Puccinia helianthi Schw. from Helianthus grosse-serratus Mart. and H. maximiliani Schrad., *see* Puccinia helianthi Schw. from Helianthus grosse-serratus Mart. [Arthur]
- Puccinia helianthi from Helianthus [sp.] (Aecidium on Helianthus [sp.]). M. A. Carleton. Science, N. S. 12:250. 15 Feb. 1901.
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- Puccinia hibisciata (Schw.) Kellerm. aecidia on Hibiscus militaris Cav., *see* Puccinia hibisciata (Schw.) Kellerm. from Muhlenbergia mexicana (L.) Trin. [Kellerman]
- Puccinia hibisciata (Schw.) Kellerm. n. n. (P. muhlenbergiae Arth., P. windsoriae Burr. non Schw.) from Muhlenbergia mexicana (Aecidium hibisciatum Schw. on Hibiscus moscheutos). W. A. Kellerman. Jour. Mycol. 9:109, 232. May, Dec. 1903.
- Puccinia hydnoidea (B. & C.) Arth. n. n. on Bromus ciliatus L., *see* Aecidium hydnoideum B. & C. from Dirca palustris L. [Arthur]

- PUCCINIA impatientis* (Schw.) Arthur n. n. (*Puccinia rubigovera* p. p. [on *Elymus virginicus*]). [J. C. Arthur. Bot. Gaz. 35:19. Jan. 1903.]
- PUCCINIA impatientis* (Schw.) Arthur n. n., *see* *Puccinia rubigovera* [P. *impatientis* (Schw.) Arthur n. n. from *Elymus virginicus* L.] [Arthur]
- PUCCINIA impatientis* (Schw.) Arth. teleutospores from *Elymus virginicus* L. (spermogonia and aecidia on *Impatiens aurea* Muhl.). J. C. Arthur. Jour. Mycol. 10:11. Jan. 1904.
- PUCCINIA jamesiana* (Pk). Arth. nom. nov. (*Puccinia bartholomaei* Diet. and *Aecidium jamesianum* Pk. [J. C. Arthur. Bot. Gaz. 35:18. Jan. 1903.]
- PUCCINIA lateripes* B. & Rav. aecidiospores [*Aecidium lateripes*] from *Ruellia strepens* (*Uredo* and *teleuto* on *Ruellia strepens*). W. A. Kellerman. Jour. Mycol. 9:107 and 234. May, and Dec. 1903.
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- PUCCINIA muhlenbergiae* Arth., *see* *P. hibisciata* (Schw.) Kellerm. n. n. [Kellerman]
- PUCCINIA osmorrhizae* on *Chaerophyllum procumbens* and (?) *Washingtonia claytoni*, *see* *Aecidium osmorrhizae* Pk. from *Washingtonia claytoni*. [Kellerman]
- PUCCINIA panici* Diet. *uredo* on *Panicum virgatum*, *see* *Aecidium pammelii* Trel. from *Euphorbia corollata*. [Stuart]
- PUCCINIA peckii* (DeT.) Kellerm. from *Carex trichocarpa* Muhl. *Aecidium peckii* DeT. on *Onagra biennis* (L.) Scop. (*Oenothera biennis* L.). J. C. Arthur. Bot. Gaz. 35:13. Jan. 1903.
- PUCCINIA peckii* (DeToni) Kellerm. n. n. (*P. caricina* DC. p. p.) from *Carex trichocarpa* (*Aecidium peckii* DeToni [*Ae. oenotherae* Pk.] on *Onagra biennis* (L.) Scop. [*Oenothera biennis* L.] W. A. Kellerman. Jour. Mycol. 8:20, also 9:9. May 1902, Feb. 1903.
- PUCCINIA peridermiospora* (E. & T.) Arth. from *Spartina cynosuroides* (*Aecidium fraxini* Schw. on *Fraxinus viridis*). J. C. Arthur. Bot. Gaz. 29:275. April 1900.
- PUCCINIA phragmitis* (Schum.) Körn. from *Phragmites communis* (*Aecidium rubellum* Pers. on *Rumex crispus*, *R. obtusifolius*). J. C. Arthur. Bot. Gaz. 29:269. April 1900.

- PUCCINIA phragmitis (Schum.) Körn. from Phragmites phragmites (Aecidium rubellum Pers. on Rumex altissimus). John M. Bates. Jour. Mycol. 9:220. Dec. 1903.
- PUCCINIA poculiformis (Jacq.) Wettst. from Cinna arundinacea (Aecidium berberidis on Berberis vulgaris). J. C. Arthur. Jour. Mycol. 8:53. June 1903.
- PUCCINIA pustulata (Curt.) Arth. n. n. teleutospores from Andropogon furcatus Muhl. and A. scoparius Mx. (spermogonia and aecidia [Aecidium pustulatum Curt.] on Comandra umbellata (L.) Nutt.). J. C. Arthur. Jour. Mycol. 10:—. Jan. 1904.
- PUCCINIA rhamni (Pers.) Wettst., *see* P. coronata Corda.
- PUCCINIA rubigo-vera [P. impatientis (Schw.) Arthur n. n.] from Elymus virginicus L. (Aecidium impatientis Schw. on Impatiens aurea Muhl.) J. C. Arthur. Bot. Gaz. 35:18. Jan. 1903.
- PUCCINIA rubigo-vera on Triticum vulgare, *see* Puccinia rubigo-vera uredospores from Triticum vulgare. [Hitchcock & Carleton]
- PUCCINIA rubigo-vera uredospores from Triticum vulgare (Puccinia rubigo-vera on Triticum vulgare). A. S. Hitchcock and M. A. Carleton. Kans. Exp. Sta. Bull. 46:3. May 1894.
- PUCCINIA rubigo-vera secalis on Secalis cereale, *see* Puccinia rubigo-vera secalis uredo from Secalis cereale. [Carleton]
- PUCCINIA rubigo-vera secalis uredo from Secalis cereale (Puccinia rubigo-vera secalis on Secalis cereale). Mark Alfred Carleton. U. S. Dept. Agr. Div. Veg. Phys. & Path. Bull. 16:43. 27 Sept. 1899.
- PUCCINIA rubigo-vera tritici on Triticum vulgare, *see* Puccinia rubigo-vera tritici from Triticum vulgare. [Carleton]
- PUCCINIA rubigo-vera tritici uredo from Triticum vulgare (Puccinia rubigo-vera tritici on Triticum vulgare). Mark Alfred Carleton. U. S. Dept. Agr. Div. Veg. Phys. & Path. Bull. 16:20. 27 Sept. 1899.
- PUCCINIA sambuci (Schw.) Arth. n. n. (P. atkinsoniana Diet.) from Carex lurida Wahl. (Puccinia sambuci (Schw.) Arth. aecidia [Aecidium sambuci Schw.] on Sambucus canadensis). J. C. Arthur. Bot. Gaz. 35:15. Jan. 1903.
- PUCCINIA sambuci (Schw.) Arth. aecidia [Aecidium sambuci Schw.] on Sambucus canadensis, *see* Puccinia sambuci (Schw.) Arth. (P. atkinsoniana Diet.) from Carex lurida Wahl. [Arthur]

(To be Continued)